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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,339	12/29/2000	Lyndon Y. Ong	61473/0269205	8404

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EXAMINER

ELALLAM, AHMED

ART UNIT PAPER NUMBER

2668

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/753,339	Applicant(s) ONG, LYNDON Y.	
	Examiner AHMED ELALLAM	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This responsive to Amendment filed on 9/8/2005.

Claims 1, 3-6 and 8-13 are pending.

Election/Restrictions

1. Newly submitted claims 8-13 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Claim 8 deals monitoring a connection for dropped packets, and controlling the rate of retransmission of dropped packets on the connection. None of these limitations were present in the originally presented claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 8-13 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

2. The drawings are objected to because; replacement sheet of figure 2 doesn't correspond to the annotated sheet of figure 2. In particular, the numeral character 250 in the replacement sheet should be changed to "340". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 3, 4 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the meaning of the claimed "desired fixed bandwidth is lesser of a current amount of unacknowledged traffic emitted by the sender into the network at a

time of detection of the congestion condition, and current receiver buffer size at that time” is confusing, because a fixed bandwidth cannot be lesser than the lesser of any other traffic. Stated differently and in accordance with the specification, it is the new traffic emitted into the connection (congested connection) that is “lesser of a current amount of unacknowledged traffic emitted by the sender into the network at a time of detection of the congestion condition, and current receiver buffer size at that time” and not the desired fixed bandwidth.

In addition, and in accordance with the specification, the claimed “controlling new traffic emitted into the network”, should be changed to “controlling new traffic emitted into the connection”.

Regarding claim 3, claim 3 depends from claim 1, thus it is subject to the same rejection as indicated above, in addition, claim 3 refers to “a desired bandwidth for each connection” and to “the desired bandwidth on the connection”. However, the “the desired bandwidth on the connection” should refer to its antecedent basis indicated in base claim 1 to be “the desired **fixed** bandwidth”. Subsequently, the claimed “a desired bandwidth for each connection” should reflect the fixed bandwidth nature of each connection, that is “a desired **fixed** bandwidth for each connection” instead.

Regarding claim 4, the claimed “the potential congestion condition” lack antecedent basis. In addition, the meaning of the claimed “controlling new traffic emitted into the network” is not clear when taken in the context of the claim, because the congestion condition is detected in the connection, and based on the specification, the

new traffic is understood to be emitted in the connection (potentially congested connection).

Regarding claim 6, in the claimed "traffic emitted by the sender", "the sender" lacks antecedent basis; in the claimed "controlling traffic from a sender delivered onto the network so that the amount of unacknowledged traffic from the sender on the network does not exceed the congestion window size", the following are noted, whether the claimed "a sender" lack antecedent basis or not, since a sender is already recited.

4. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the new traffic emitted into the connection is no more than a current receiver size. More specifically, as indicated in the specification, page 11, lines 3-16, the new traffic emitted in the connection is the lesser of the current unacknowledged traffic and the current receiver buffer size. The method requires the comparison of both the unacknowledged traffic and the receiver buffer size to the new traffic to be emitted into the connection and not just the unacknowledged traffic. The comparing of both current unacknowledged traffic and receiver buffer size are required for the invention to work.

Claim 5 depends from claim 4, thus it is subject to the same rejection.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Borella et al, US (6,643,259).

Regarding claim 4, Borella discloses a method of controlling congestion in a communication network (see figure 1) comprising:

Entering a congestion avoidance state when some form of congestion has been detected. (Claimed detecting a network congestion condition);

Borella also discloses setting the congestion window to a value threshold cwnd*. See column 13, lines 65-67, and column 14, lines 1-13. (Claimed controlling new traffic emitted into the network to be no more than a current unacknowledged traffic load of the network at the time of detection).

Examiner interpreted the cwnd* as being the amount of unacknowledged traffic from the sender 14 on the network before receiving acknowledgments.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 3, 6-13 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 9/8/2005 with regard to claim 4 have been fully considered but they are not persuasive.

Applicant argues, "claim 4 as amended now recites"... *A method of controlling congestion in a communication network, the method comprising.. **detecting a***

congestion condition in a connection between two nodes in the communication network, the connection having a desired bandwidth, ... and upon detection of the potential congestion condition, controlling new traffic emitted into the network to be no more than a current unacknowledged traffic load of the network at the time of the detection.

Applicant can find no such teaching in Borella, Rather than allow traffic to be placed on a network until a congestion condition is detected, Borella limits the output of traffic onto a network to prevent congestion from occurring. In contrast, the present invention permits traffic to be forwarded onto a network until a congestion occurs, at which point the traffic is reduced in a controlled manner.” Emphasis added.

Examiner respectfully traverses Applicant's argument, because Applicant is erroneous in characterizing the claimed invention as different from that of Borella; in particular, Applicant's claimed invention permit traffic to be forwarded onto a network and prevent the network from being congested by detecting a “potential congestion condition in a connection”, that is Applicant's claimed invention is no different from that of Borella given Applicant's own account, i.e. Applicant stated that *Borella limits the output of traffic onto a network to prevent congestion from occurring*.

As far as the claimed limitations are concerned, Borella teaches limiting the output traffic onto a network to prevent congestion from occurring using the cwnd*, the cwnd*, being the amount of unacknowledged traffic from the sender 14 on the network before receiving acknowledgments.

It is equally important to note that claim 4 can be rejected on the common knowledge provided by the established TCP/IP standard. For example, as Applicant point out in the specification as part of prior art, on page 3, lines 4-10:

“More specifically, for each connection TCP remembers the size of the receiver's window *rwnd* as provided in ACK messages and a limit *cwnd* called the congestion window. The congestion window *cwnd* is a sender-side limit on the amount of data the sender can transmit into the network before receiving an ACK message. The sender's window is always the minimum of the receiver's window (the size of the receiver's buffer, i.e., the amount of new traffic it can accommodate) *rwnd* and the congestion window *cwnd*. “

The passage above imply that the congestion window can not exceed the threshold imposed by the timeout period prior to receiving an ack message, nor exceed the receiver's buffer size. A lack of receiving an ack within a predetermined period can be a trigger for potential congestion condition, and since the transmit buffer keep packets (or datagram) for potential retransmission, it would be natural not to send new traffic exceeding the unacknowledged traffic, first because the unacknowledged traffic need be sent first (as dictated by the TCP protocol), and second it would make no sense to send more than what a congested connection can handle, therefore emitting traffic into the connection to be no more than the unacknowledged traffic at the time of the potential congestion detection would be naturally required since doing otherwise would cause a congestion collapse.

Examiner notes that Applicant failed to respond to Examiner argument raised in the final office action, which partially reiterated here:

Borella on column 9, lines 38-43 where it is stated:

“The rate at which packets are introduced into the data network 10 are gated according to the rate that ACKs are returned to the first network device 14, thus maintaining conservation of flow between the first network device 14 and the second network device 16”. The fact that the rate of the packets depends on the rate of received acknowledgments implies that the unacknowledged traffic is also considered and that sets the congestion window accordingly. It should be noted that the fact that the congestion window depends on the acknowledged traffic and the non-acknowledged traffic, because the source of traffic assumingly knows the capacity of the link in case of no congestion, and based on that some measure must be taken to account for the non-acknowledged traffic.

Examiner believes that given the broadest reasonable interpretation of the claim limitation the rejection of claim 4 above is proper.

Conclusion


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Ludwig, US 6,754,228).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. ELALLAM
Examiner
Art Unit 2668
February 15, 2006


JOHN PEZZLO
PRIMARY EXAMINER